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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,639	06/20/2006	Hidetomo Miyake	65728 (45672)	3557
21874 7590 05/10/2010 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER				
AZIZ, KEITH T				
ART UNIT		PAPER NUMBER		
1791				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/583,639

**Applicant(s)**

MIYAKE, HIDETOMO

**Examiner**

KEITH T. AZIZ

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 4 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 1/8/2010

### **DETAILED ACTION**

1. Claims 1, 3-4, and 8 are pending as amended on 2/17/2010, claims 2, and 5-7 having been cancelled.
2. The rejection of claims 1, and 3-4 under 35 U.S.C. 103(a) as being unpatentable over Nishi in view of Akira is maintained, for the reasons provided in paragraph No. 3 of the office action dated 11/20/2009 and for the reasons as explained below.
3. The rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Nishi, in view of Akira, and further in view of Norihiko is maintained for the reasons provided in paragraph No. 4 of the office action dated 11/20/2009 and for the reasons as explained below.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Amendment and Arguments***

5. Applicant's arguments filed 2/17/2010 have been fully considered but they are not persuasive. Applicant contends that neither Nishi nor Akira teaches that the leak trenches are formed in a grid pattern in the region of the adsorption face. While Nishi does not explicitly teach that the leak trenches are formed in a grid pattern, Akira clearly demonstrates that the leak trenches are formed in a grid pattern. Akira teaches an adsorption face (see item 1c in Drawing 1) that is surrounded by trenches (see item 1b), which are leak trenches. Given the shape of the protrusions that form the adsorption port, the trenches implicitly form a grid (see the relative configuration of 1c in Drawing

1b, and the placement of item 1b in relation to 1c in Drawing 1c). As a grid is implicitly formed, by the configuration of the adsorption ports, Akira teaches a grid pattern for the leak trenches. While Nishi does not teach that the leak trenches are in a grid pattern, the rejection is under 35 U.S.C. 103(a), and the references may be combined to meet the limitations of the claim as presented.

6. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Claim Rejections - 35 USC § 103***

7. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi in view of Akira.

Nishi discloses a movable stage apparatus and method for exposing a substrate plate (see title and abstract). Nishi teaches a stage with an adsorption face for holding a substrate (see item 10 of Figure 6), which utilizes negative pressure through a vacuum source to hold the article in place (see the source under item 80 in Figure 6). Nishi teaches that the vacuum source is connected through an air discharge path (see item 73 of Figure 6), and that the vacuum source is connected to adsorption ports (see item 91 of Figure 6) throughout the stage. Additionally, Nishi teaches that a gauge (see item 71e of Figure 6) monitors the pressure of the air discharge path. Nishi does not

explicitly disclose that the leak trenches (item 92 of Figure 6) are open to the side of the face of the stage. Nishi further teaches that the pressure detecting means is provided in the path that is used by each of the adsorption ports (see the connection of 71e to item 73 in Figure 6). Nishi additionally teaches that the adsorption ports are formed at the center of the region surrounded by the trenches (see the location of 91 in Figure 6). Nishi further teaches that the adsorption ports may be made in a striped pattern (see item 10 of Figure 1).

Akira discloses a substrate suction plane that is used to maintain the flatness of a substrate during peel charging (see title and abstract). Akira teaches that the leak trenches may be open to the side of the face of the stage (see drawing 2, notably the trenches in between item 1a and 1c). Akira further teaches that the trenches are formed in a grid pattern (see drawing 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the leak trenches of Nishi in a grid pattern as taught by Akira. The rationale to do so would have been the motivation to prevent a non-uniform substrate from being generated (see paragraph [0017]).

With regards to claim 3, Nishi teaches that valves used to open and close the air discharge path (see items 71a and 81a of Figure 6) may be opened or closed based on the pressure detected by the pressure gauge (see the lower portion of Figure 7).

With regards to claim 4, Nishi teaches that the valve may be switched to a closed state based on a command from the control unit (see paragraph [0012]). It would have been obvious to one of ordinary skill in the art to close the valve when there is no vacuum state detected, so as to allow a new tank to be connected in the system. It also

would have been obvious to one of ordinary skill in the art to close the valve if no vacuum is detected but the system is on, so that the pressure gauge could be tested.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi and Akira as applied to claims 1, and 3-4 above, and further in view of Norihiko.

Nishi and Akira teach the apparatus of claim 1.

Nishi and Akira do not explicitly disclose the use of two devices, and that the two devices face each other and move close together while holding the substrate.

Norihiko teaches the use of two substrate adsorption stages, and that the two stages face one another and are brought close together, as little as 5 microns, to bond the substrates to each other (see Drawings 1 and 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an additional substrate stage as taught by Norihiko in the apparatus of Nishi and Akira. The rationale to do so would have been the motivation to abolish the presence of an uneven picture (see paragraph [0032]).

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH T. AZIZ whose telephone number is (571)270-7658. The examiner can normally be reached on Monday through Thursday 8:00am-6:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna I. Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTA/

/KHANH NGUYEN/

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